First Copy

A National Newspaper for Every Branch of the Industry

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

Vol. 12. No. 1550 — Entered as second-class matter Aug. 27, 1925, Post Office, N. Y., N. Y., Under Act of March 3, 1879. — NEW YORK, SATURDAY, SEPTEMBER 5, 1931 — 5 Cents. $12 Per Year

PUBLIC LIBRARY SEP 1931

Bendix Aviation Joins Indiana Standard Oil in Forming Lubricating Corp.

New Organization Will Make and Market Grease and Oil Fittings, Dispensers And Lubricants

CHICAGO, Sept. 4.—The Bendix Aviation Corporation and the Standard Oil Company of Indiana have associated themselves in the formation of the Lubrication Corporation, which will engage in manufacturing and marketing of grease fittings for all makes of automotive and industrial machinery, grease dispensing equipment, automotive lubricants and lubrication service.

The new company has been incorporated in Delaware with a nominal authorized capitalization of $200,000 composed of 2,000 shares of $100 par stock, which will be owned equally by the two companies. R. P. Lansing has been elected president, and M. W. McConkey and Bruce K. Brown, vice-presidents.

B. F. GOODRICH MAKES TWO CHANGES IN BRANCH SALES ORGANIZATION

Akron, O., Sept. 4.—Two changes in the sales organization of the B. F. Goodrich Company have been announced. A. H. Leavitt, formerly manager of the north-central district, is transferred to Buffalo, N. Y., in charge of area constituting the Buffalo branch district.

He has been associated with Goodrich for nearly 20 years and is son of the late Percy Leavitt, an associate of Dr. B. F. Goodrich, the company's founder. A. H. Leavitt came to Goodrich from Cornell University and worked in the mill room several years before entering the sales department.

The other change is the appointment of W. C. Manley to the Pittsburgh division, with territory covering western Pennsylvania, eastern Ohio, West Virginia and part of Maryland.

Manley formerly was connected with the Diamond Rubber Company and the Firestone Tire and Rubber Company in sales and merchandising capacities.

J. C. CHICK FINDS BUSINESS IN EAST 'UNUSUALLY GOOD'

New York, Sept. 4.—Business conditions in the Eastern sales region, of which this city is a key point, are unusually good, if judged from the automotive point of view, according to J. C. Chick, general sales manager of the Cadillac Motor Car Company, who is visiting here.

"Registrations of Cadillac and La Salle cars in this region during the first half of the year were 94 per cent. of those in the corresponding period of 1930," said Mr. Chick. "This compares with 70 per cent. which is the high-price car average throughout the United States. The high-price field is regarded as $2,200 and up.

"This region leads Cadillac's remaining four sales regions by a substantial percentage. The next best record is held by the Great Lakes section, which has delivered 87.8 per cent. as many cars as it did in the same period last year.

"I attribute our good showing this year to the fact that more and more motorists are turning to multi-cylinder motoring. They are finding that multi-cylinder engines provide greater smoothness and power, and

(Continued on Page 2)

S. A. E. Outlines Programs For Coming Fall Events

NEW YORK, Sept. 4.—The complete programs for its participation in the Metal Congress to be held at the Hotel Statler, Boston, September 21 to 25, as well as the final program for its annual production meeting in Detroit, October 7 and 8, and a schedule of section meetings are announced today by the Society of Automotive Engineers.

The S. A. E. this year is planning a more extended participation in the annual Metal Congress and is planning to hold its session in the Georgian Room of the Hotel Statler, in Boston, on Wednesday, September 23. The program will be as follows:

9.30 a. m., Georgian Room—Chairman, F. P. Gilligan, Henry Souther Engineering Corporation. "Heat Treating Methods and Costs," E. F. Davis, meallurgist, Warner Gear Company; "Recent Developments in Heat Treating Ball Bearing Races," Dr. Haakon Styri, SKF Industries, Inc., Philadelphia; "Characteristics of Alloyed Cast Iron," F. W. Shipley, foundry metallurgist, Caterpillar Tratcor Company. Discussion: Each paper will be open for general discussion following its presentation.

The tenth annual production meeting of the society, which will be held at the Book-Cadillac in Detroit, will cover a two-day period, with five technical papers scheduled.

The complete program for this event is as follows:

Wednesday, October 7

10 a. m., Crystal Room—"Welding," J. W. Meadowcroft, Edward G. Budd Manufacturing Company.

2 p. m., Crystal Room—"Inventory Control," C. P. Stiffler, Oakland Motor Car Company; "Cleaning and Preparation of Metal Surfaces," F. P. Spruance, American Chemical Paint Company.

Thursday, October 8

10 a. m., Crystal Room—"Hot Coining," J. H. Friedman, National Machinery Company; "Economic Advantages of Permanent Molding,"

(Continued on Page 7)

Special Session Urged to Repeal Massachusetts Insurance Laws

All Parties Unite in Protesting Present Compulsory Act, Due to Ever Increasing Costs of Policies

BOSTON, Mass., Sept. 4.—The movement to force repeal or drastic changes in the compulsory insurance law of this state appears to be gathering headway, especially in the territory near Boston, though it is by no means confined to this district. Higher insurance rates affecting the larger cities make these focal points for protests against this law.

The move for a comprehensive consideration of the insurance law and its operation does not belong to either party. Republicans and Democrats alike have expressed themselves as favoring a call by Gov. Ely for a special session of the Legislature to consider the whole problem of the compulsory insurance law. The governor is scheduled for a radio talk next Tuesday evening and it is expected that he will deal with the insurance matter at that time.

A hearing on the schedules for the coming year is set for September 11 and at that time not only legislators but the general public, thorugh the automobile clubs and civic bodies, will have a chance to express themselves. The insurance companies will also be permitted to state their side of the case.

Those who favor aboration of the compulsory insurance law point to the fact that when this measure first went on the statute books, insurance premiums were decreased 25 per cent., but that revisions since then have increased the rates by 27 per cent.

Protests against the insurance law are being voiced by automotive and civic bodies in many sections of the state. The Springfield Automotive Trade Association recently went on record as against the law and in favor of changing it. The Chelsea Chamber of Commerce has just filed with Gov. Ely a definite program for revamping the insurance law.

With a view to repealing the Massachusetts compulsory automobile insurance law in its present form and substituting legislation provid-

(Continued on Page 2)

DIAMOND T GAIN CONTINUES OVER 3-MONTHS' PERIOD

Chicago, Sept. 4.—Continuing a series of sales gains that started in June, the Diamond T Motor Car Company, through Vice-president E. J. Bush, announced yesterday that August sales were 20 per cent. ahead of same month last year, thus marking the third sucessive month to show an increase over corresponding months in 1930.

Mr. Bush predicted that September will duplicate August on comparative basis with last year with the newly introduced model 316, two-ton truck, playing an important part and with considerably more active demand for heavy duty models.

He states that model 216, 1½-ton low priced units, were the chief factor in the August sales increase.

Outstanding among the cities to make gains was New York, where sales were 75 per cent. ahead of July and 50 per cent. ahead of August last year. Mr. Bush reported that in August between fifteen and twenty new dealers were added by Diamond T and none was lost.

M. E. A. DIRECTORS TO DISCUSS PLANS OF REORGANIZATION

New York, Sept. 4.—Members of the board of directors of the Motor and Equipment Association will meet at the Book-Cadillac Hotel in Detroit on September 15 and 16.

Among the important items of business to be discussed are details of the Motor and Equipment Manufacturers Association and the Motor and Equipment Wholesalers Association which will come into existence on January 1, 1932, to take the place of the present M. E. A. Interviews with members of the M. E. A. by representatives of the association indicate almost universal approval of the reorganization plans.

Many of the M. E. A. directors will stay over in Detroit to be preesnt on September 17 at the drawings for space in the second joint M. E. A.-N. S. P. A. trade exposition to be held in Atlantic City, N. J., December 7 to 12.

BODY INDUSTRY'S SALES NOW REACH BILLION DOLLARS

Washington, Sept. 4.—According to a bulletin just issued by the Bureau of Census, more than four-fifths of the sales made by plants primarily engaged in producing motor vehicle bodies and parts are made to users—that is to say, manufacturers of complete motor vehicles, operators of fleets and private owners. Of the total sales, $1,314,936,000, made by these plants in 1929, 83.8 per cent., or $1,102,560,000, were sold to these consumers.

The full text of the bulletin follows:

"Data collected for the census of distribution show that of the total sales by the manufacturing plants in 1929, amounting to $1,314,936,000, 83.8 per cent., or $1,102,560,000, was sold in this way. (This classification may include some interplant transfers, for a few of the manufacturing plants reported such transfers as sales to industrial users.)

"Manufacturing plants sold 1.8 per cent., or $23,105,000 worth of goods to their own wholesale branches for resale to dealers and industrial users.

"The remaining sales were made as follows: To wholesalers, 10.8 per cent., or $142,232,000; to retailers, 3.6 per cent., or $47,039,000.

"Of the above sales to dealers and

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Late News Flashes

Berlin, Sept. 4.—The Ford Motor Company of Germany has reopened its Cologne plant, which was closed down early in August. Production is now running between 30 and 40 cars a day. The plant's capacity is 150 units a day. Profits for 1931 to date are said to have been satisfactory.

* * *

New York, Sept. 4.—Allis Chalmers unfilled orders as of August 31 totaled $8,700,000, which compares with $8,900,000 on July 31 and $16,239,000 on August 31, 1930.

* * *

Detroit, Sept. 4.—Sparks Withington Company has declared the regular quarterly dividend of 25 cents on the common stock, payable September 30 to stockholders of record September 14 and the regular quarterly dividend of $1.50 on the preferred stock, payable September 15 to stockholders of record September 8.

* * *

New York, Sept. 4.—The Sinclair Oil Company has met the price of 68 cents a barrel posted by the other companies for East Texas crude oil.

Urge Repeal of Bay State Compulsory Insurance Act

(Continued from Page 1)

ing for a state insurance system, Mayor John J. Murphy of Somerville took out initial papers on September 2 at the office of the secretary of state, Frederic W. Cook, for an initiative bill.

At the same time a bill for a state automobile insurance company to operate in competition with private companies was filed by Frank A. Goodwin, chairman of the Boston Finance Commission. The latter measure also bears the signatures of Representatives Thomas F. Carroll and Augustine Airola and Senator Conde Brodbine of Revere.

The initiative bill sponsored by Mayor Murphy would automatically go to the people for a referendum vote if rejected by the Legislature, provided the requisite number of signatures is filed. Mr. Murphy expressed a belief that legislation could be framed to meet the objections of the Supreme Judicial Court, which declared unconstitutional an earlier state fund bill presented by Mr. Goodwin.

Owners of motor cars, under the provisions of the proposed initiative legislation, would be required to pay premiums into a public fund, from which claims would be paid. Motorists who do not care to join the public fund would be required to furnish bond.

The sponsors of Mr. Goodwin's new bill declared that it has "practically no new features from the present law, except that it creates a state automobile insurance company with the same rates as a mutual insurance company and will be governed by a board of directors to be appointed by the public works commissioner with the approval of the governor and the council."

The company would be authorized to write public liability, property damage, collision and fire-and-theft insurance on automobiles in competition with private insurance carriers.

Senator Brodbine has issued a statement in which he characterized the new rates promulgated by the state insurance commissioner, Merton L. Brown, as "unfair and unjust." He said he believed a system of "meriting the driver" should be adopted, as it would "promote safety and get lower rates."

Representative Carroll declared that "the Legislature must be brought to a realization that the present function of the law is discriminatory and must be changed."

The tentative schedule of rates for 1932, which will be discussed at a public hearing September 11, shows that rates on small cars (W class) in Boston would be increased from $53 to $61; in Chelsea from $64 to $87; in Revere from $57 to $73; in Everett from $43 to $52; in Cambridge from $43 to $46, and in Malden from $32 to $46. In 231 cities and towns of the state the rate for the coming year on small cars is $16, the same as this year.

STERLING MOTOR TRUCK PROMOTES E. J. WALKER

Milwaukee, Sept. 4.—An announcement affecting the management of the Sterling Motor Truck Company of Pittsburgh is made by officials of the parent company here. E. J. Walker, formerly secretary, has been promoted to vice-president and general manager, and will have complete charge of the Pittsburgh company's activities. He succeeds Carl G. Kanne who was manager for several years and recently transferred to the sales division of the company's branch at Philadelphia.

Another change reported is the promotion of James Martin to secretary, filling the position vacated by Mr. Walker. Martin was was formerly in charge of the used truck division and like Walker and Kanne, is a veteran in the Sterling organization. No other changes affecting the personal of the organization is being anticipated, it is stated.

BODY INDUSTRY'S SALES NOW REACH BILLION DOLLARS

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industrial users $33,066,000 was made through manufacturers' agents, selling agents, brokers or commission houses. One hundred nineteen manufacturing plants sold through such agents, twenty-eight of them selling their entire output in this way.

"The total sales as shown above are $223,008,000 less than the value of products reported by the census of manufacturers. This difference is explained by the following facts: Interplant transfers reported amount to $209,945,000, and contract work (labor performed on materials owned by others) and custom and repair work amounted to $13,063,000. None of these items is included in sales.

"There are 1,154 manufacturing plants engaged primarily in making motor vehicle bodies of all types (not including complete chassis), and motor vehicle parts, such as gears, tops, wheels, radiators, bumpers, axles, clutches, shock absorbers, windshields, rims, frames, horns, windshield wipers and sheet metal for fenders, dust shields, hoods, bonnets, etc. Nine of these plants transferred their entire output to other plants of the same company.

"This report shows the sales channels used by the other 1,145 plants. The manufacture of certain other assemblies and parts—notably engines, motors, tires, ignition apparatus, springs, batteries and starting and lighting systems—is not included in this industry. Also, where a manufacturer makes various motor vehicle parts in his main plant and assembles them into complete vehicles at branches, the main plant is classified in the bodies-and-parts industry, and the branches in the motor vehicle industry."

J. C. CHICK FINDS BUSINESS IN EAST 'UNUSUALLY GOOD'

(Continued from Page 1)

they are enjoying the greater comfort which the fine car offers.

"The latest evidence of this trend toward multi-cylinder cars is the enthusiastic reception given the Cadillac V-12. Introduced last October, the V-12 has accounted for approximately one-fourth of Cadillac and La Salle sales this year. Further significance is given by the fact that the Cadillac V-16 holds the public preference when it comes to purchase of the very finest cars."

T. D. MITCHELL NAMED DODGE REPRESENTATIVE

Des Moines, Sept. 4.—T. D. Mitchell has been appointed sales representative for Dodge Brothers Corporation with headquarters here, according to an announcement made today by General Sales Manager A. vanDerZee. Mr. Mitchell will work under the direction of C. B. Warner, manager of the Kansas City regional office.

BUYS SERVICE STATION

Fort Lee, N. J., Sept. 4.—For the second time within a month the Central Service Station, at Main and Liberty Strets, Fort Lee, has changed hands. A. H. Molke has sold the station to George Kunzel and Carl Bommerer, of West New York.

SPARKS from DETROIT

L. G. Paxson Proves It
* * *
Water Birds
* * *
Bill Noble
* * *
A Car for Pets, Not Petters
* * *
"Shooting" the Works

Chris Sinsabaugh—Detroit Editor

L. G. PAXSON, sales manager of Reo, can conscientiously throw open his coat, stick his thumbs in the armholes of his vest and tilt his hat to a cocky angle now that he has received his latest report on his campaign for dealers. Three hundred and eighty-three new ones in the past sixty days and 230 of them coming in August will keep Paxson busy for a while. The new low priced Flying Cloud and the new ton and a half truck are given considerable credit for the unusual growth of the dealer family.

* * *

NATURALLY we Detroiters are motor boat conscious today because of the Harmsworth Trophy regatta which goes into action on our broad river late this afternoon. Because this conductor is wearing a yachting cap today he is going to take advantage of John Clifford's bright thought—providing water transportation for the newspaper men and officials.

Clifford has just become vice-president in charge of sales of Dee Wite, Inc., which makes such snappy runabouts and cruisers and he has put into service for the regatta a fleet, consisting of a cruiser and eleven runabouts, for the use of the press.

Before joining the motor boat crowd, this chap Clifford was one of us automobile people—with Wills Ste. Claire, Nash and General Motors Export. He took to the water in 1927 with Chris-Craft, then joined Dee Wite a few weeks ago.

* * *

BILL NOBLE, so he writes me from Chicago, has gone back to the Touzalin advertising agency, taking with him several good automobile accounts, like Vesta Consolidated, Western Chain Products, Will-O-Lite signs and Ohio Parts. Time was when Bill was in the trade paper field, just like us.

* * *

KITTY and Tige, picked up as strays in Grand Rapids, now can ride in style and comfort to the city pound in a new type of dog catcher's wagon put out by De Vaux-Hall. The vehicle has been given a new name—it's now an animal ambulance and is built after designs furnished by officials of the Kent County Humane Society.

On the upper deck there are several ventilated boxes that serve as private compartments for stray cats. The lower deck is partitioned and well ventilated, providing separate spaces for injured animals. In summer the windows are open and safeguarded by wire screening. In winter glass windows replace the screening.

* * *

CADILLAC engineers have been using the slow motion movie camera to find out about the cause and effect of tramping and shimmying, about the behavior of front springs and axle under different driving conditions, about the reaction of tires and shock absorbers to different roads.

To obtain this information, the engineers set up a slow motion camera in the rear of a car. They trained the camera on the front end of the automobile which was to follow and the camera clicked dutifully and the secrets were learned. Another test consisted of the camera car running parallel with and alongside the one being scrutinized to secure a side view graphic account of steering.

After all this, do you wonder that Cadillac is so proud of its "effortless" steering. No guess work about this engineering.

JULY 1931, compared with July 1930, showed Willys-Overland 35% ahead of the industry. Sales of Willys cars and trucks increased 15.9%, while the industry as a whole showed a decrease of 20%. Here is sound evidence of the popularity of Willys products.

Write or wire for franchise particulars

Willys-Overland, Inc., Toledo, O. Willys-Overland, Ltd., Toronto, Can.

WILLYS

A BIG SIX priced like a four
A POWERFUL EIGHT . . .
A BRILLIANT KNIGHT . . .
2 NEW WILLYS TRUCKS

Classified Advertising

Classified Rates 5c Per Word

FOR SALE

One LeBLOND 26" x 10' Universal Crankshaft Pin Lathe; practically new. Price $900.00.
The Western Iron & Foundry Co., Wichita, Kansas.

Foreign Trade Opportunities

Washington, D. C., Sept. 4.—Foreign automotive trade opportunities just announced by the automotive division of the Bureau of Foreign and Domestic Commerce of the Department of Commerce are listed below.

Additional information may be obtained from the bureau and its district and co-operative offices by duly registered firms or inviduals upon written request, giving the opportunity number.

53251—London, England; agency for automobile accessories.

53343—Berlin, Germany; purchase of automobile accessories and garage and service station equipment.

53303 — Frankfort, Germany; agency for automobile accessories and parts.

53469—Turin, Italy; sole agency for automobile accessories.

53362—London, England; agency or purchase of automobile accessories, garage equipment and tools.

53483—Berne, Switzerland; purchase of automobile fan belts, rubber or leather.

53484—Lisbon, Portugal; agency or purchase of automobile pistons, piston rings, hydraulic jacks and roller bearings.

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

Published Every Day Except Sunday and Monday by
AUTOMOTIVE DAILY NEWS PUBLISHING CORPORATION,
350 Hudson St., New York, N. Y.
O. J. Elder, President H. A. Tarantous, Vice-President. Alexander Johnston, Secretary.
Entered as second-class matter August 27, 1925, at the post office at New York, N. Y., under the Act of March 3, 1879.
350 Hudson St., New York, N. Y. Telephone CA nal 6-1000

Member A. B. C.

Mail subscriptions to CIRCULATION DEPARTMENT 350 Hudson St.
Subscription Rates—One year, $12.00; two years, $20.00, for United States and Canada, also Mexico, Cuba and Panama.
To Other Countries—One Year, $15.00; two years, $26.00. Single copies, 5 cents.

SATURDAY, SEPTEMBER 5, 1931

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Synthetic Fuels

THOSE of us who date back to the early days of the automotive industry remember vividly the many occasions when it was announced that some local genius had discovered a "synthetic automobile fuel." Not a few gullible dollars have gone into some mysterious product, usually water impregnated by a few green pills, which, placed in the tank of a car, ran the vehicle an unbelievable number of miles at practically no cost at all. The synthetic fuel racket came to be considered in the class with that of the man who raised money to finance his method of extracting gold from gold fish.

It is somewhat startling, therefore, to find Professor James R. Bailey of the University of Texas telling the American Chemical Society at its Buffalo, N. Y., convention that synthetic petroleum and petroleum products are nearing actuality. With the help of the American Petroleum Institute the University of Texas is conducting experiments to determine the actual substances that go into the structure of petroleum. Once this is accomplished the chemist has a very good chance of producing those substances and amalgamating them in the laboratory.

Professor Bailey told the assembled chemists that there are probably 500 individual substances in kerosene bases, of which about four have now been definitely identified. That the chemists still have plenty of work ahead of them, to determine the actual structure of petroleum and then reproduce it in the laboratory, is evident.

However, it is plain to see that the possibility is there. The beginning of the automotive industry as an important factor in transportation goes back only about twenty-five years. Those who live a similar period from today undoubtedly will see developments even more startling than those that have come to date. Perhaps in 1956 it will be a commonplace to hear the head of the household in New York say to his chauffeur: "James, kindly drop two fuel pills in the gas tank. I am dining in San Francisco tonight and I don't want to stop for a refill on the way."

Build Now

FAR be it from an automotive trade paper to counsel far-reaching expansion programs at the present moment. If we did so advise, there would be few to follow. Nevertheless there never has been a time when wise and careful preparations for expansion were more unerringly indicated.

The company which is now in a position to expand or improve its facilities can do so at a lower cost rate than it is likely to enjoy for many years to come. Building materials, equipment and even labor costs are lower than they have been for many years and the man or the company which gets in first will reap the greatest advantage in this respect.

Obviously any organization will, at the present time, scrutinize minutely any plan for spending money in improvements. Such a plan ought to carry with it a certainty of bringing a definite return on the outlay. Let us examine a case in point. The city of New Orleans is just now engaged in installing a new system of fire sprinklers over its dock area. This installation will not only prevent possible heavy losses through fires, but it will bring such substantially lower rates for insurance as will serve to cover the investment over a period of years.

In our own industry, if there is one thing certain, it is that service business is going to be good this year and next year. The automobile dealer who adds equipment to his shop, whereby he can turn out better work in a shorter time, is making a prudent investment, one that even his banker would approve. And it may please him also to know that he is contributing to relieve unemployment in the machinery business at the same time.

Differential Discussions

IN this column Automotive Daily News is glad to present the opinions of its readers on topics related directly to the automotive industry. Automotive Daily News, however, must disclaim responsibility for such opinions.

All questions regarding merchandising, technical problems or other information pertaining to Automotive Industry will be answered without charge in this column.

Disagrees With Vane

Automotive Daily News: For your information I attach copy of letter to Mr. C. A. Vane, general manager of the National Automobile Dealers Association. I hope you will read his bulletin of August 15.

In my opinion the present condition of the automotive business is not due entirely to existing conditions. I believe we can attribute a large part of the lost business to the reduced travel on Sundays, holidays and nights because of the increasing hazards on the highways.

It seems to me that the automobile manufacturers and dealers would find it quite profitable to energetically interest themselves in co-operating with the A. A. A. clubs and other agencies in reducing highway accidents.

C. W. ROBERT,
President, Carolina Motor Club,
Greensboro, N. C.

COMING EVENTS

SEPTEMBER

1- 3—**Cleveland, O.** Hotel Statler, Society of Automotive Engineers, twentieth annual aeronautical meeting in conjunction with National Air Races.
7- 9—**Kansas City, Mo.** American Society of Mechanical Engineers, general meeting.
8-17—**Utrecht, Holland.** Utrecht Fair, bus and truck show.
9-10—**Toronto, Can.** National Association of Show Managers, convention.
11—**Charleston, W. Va.** West Virginia Motor Transport Association, meeting.
16-17—**Atlantic City, N. J.** National Petroleum Association, annual meeting. Hotel Traymore.
17—**Chicago, Ill.** Steel Founders Society, convention.
20-26—**Springfield, Mass.** Eastern States Exposition.
21-25—**Boston, Mass.** American Welding Society, meeting. The following societies will participate: American Society for Steel Treating, American Welding Society, Iron and Steel Division, A. S. M. E.; Machine Shop Practice Division, A. S. M. E.; Iron and Steel Division, A. I. M. E.; Institute of Metals, A. I. M. E.
28-29—**Atlantic City, N. J.** National Association of Motor Bus Operators, fifth annual meeting. Hotel Ambassador.
26-Oct. 2—**Atlantic City, N. J.** American Electric Railway Association, annual meeting.

OCTOBER

1-11—**Paris, France.** International Automobile Salon.
2- 3—**Houston, Tex.** American Institute of Mining and Metallurgical Engineers, petroleum division meeting
7- 8—**Detroit, Mich.** Society of Automotive Engineers, national production meeting.
12-13—**Pittsburgh, Pa.** Pennsylvania Automotive Trades Association, convention.
12-16—**Chicago, Ill.** National Safety Council.
14-16—**Pittsburgh, Pa.** Society of Industrial Engineers, convention.
14-15—**Albany, N. Y.** New York Automobile Dealers Association, convention.
15-17—**Pittsburgh, Pa.** American Gear Manufacturers Association, convention.
15-24—**London, England.** International Motor Exhibition, Olympia Hall.
19-22—**Chicago, Ill.** National Hardware Association, convention.
22-28—**Prague, Czecho-Slovakia.** International Automobile Exposition.
22-28—**Prague, Czecho-Slovakia.** International Automobile Exposition.
23—**New York City.** American Iron and Steel Institute, convention.
27-28—**Chicago, Ill.** American Railway Association, Motor Transport Division, meeting

NOVEMBER

Copenhagen, Denmark., Motorcycle, truck and bus exposition.
5-14—**London, England.** International Commercial Motor Transport Exhibition, Olympia Hall.
10-12—**Chicago, Ill.** American Petroleum Institute, annual meeting, Hotel Stevens.
28-Dec. 9—**Brussels, Belgium.** Automobile Salon.
30-Dec. 4—**New York City.** American Society of Mechanical Engineers, annual meeting.

DECEMBER

7-12—**Atlantic City, N. J.** Motor and Equipment Association and National Standard Parts Association, Joint Trade Show.
9-11—**Atlantic City, N. J.** American Institute of Chemical Engineers, meeting.

JANUARY

11-14—**Detroit, Mich.** American Road Builders Association, twenty-ninth convention and show.
9-16—**New York City.** National Automobile Chamber of Commerce, National Automobile Show.
30-Feb. 6—**Chicago, Ill.** National Automobile Chamber of Commerce, National Automobile Show.

Contemporary Comment

SITUATED on the outskirts of Moscow, the history of the Amo factory differs considerably from that of the Putilov Works. It was originally started during the war, being owned and controlled by a small private company with the object of building automobiles for sale to the Russian military authorities, and it would have been the first automobile factory in the whole of the Russian Empire. The buildings, however, were commenced in 1916, so that the revolution took place before a single motor car had been built, or indeed before production was in any sense under way. Immediately after the revolution the factory was taken over by the Soviet authorities and used for reconditioning derelict war and other automobiles. About 3,000 workers were engaged on this work, very few of whom were skilled. Much has occurred since this early beginning; there is an extensive factory now in existence, and this, in its turn, is being reorganized. When plans are completed the new plant will rival the present enterprise to the extent that this now surpasses the earlier effort.

Early in 1930 it was decided that the Fiat model resembled too closely the capacity of the standard Ford vehicle that is being made in large quantities at another Russian factory. It was therefore decided to discontinue manufacture of the Fiat design and supersede it by a commercial vehicle considerably larger than the 30-hundredweight chassis. The new design is based on the Autocar of America and is a 2½-ton model. It is a typical American lay-out, having a 6-cylinder engine with clutch and gear box as unit. No aluminum is used in any of the larger parts. The cylinder block has a detachable head, and is built in one with the upper half of the crank case. A massive double-reduction rear axle is employed.

One thousand sets of parts were ordered from America so that the factory hands would have the experience of assembling these into complete chassis before commencing the actual manufacture of the parts themselves. These assembled chassis are now nearly complete, and in a month or two regular production will have commenced on vehicles made completely in the Amo works. The output for which the works are designed is 25,000 cars per year in one shift, and multiples of this figure when working two or three shifts. It is anticipated that this output will be attained at the end of the five year plan, namely, 1933.—**Automobile Engineer (England).**

* * *

THERE is no doubt of the fact that the present depression has brought more work instead of less work to all trade associations. The desire of business executives to get at facts is doubtless the reason for their increased demand upon trade associations, and with it all comes another benefit from the existing depression.

In normal times executives are more interested in improving their products and developing the demand for them than in finding out the whys and wherefores of business. So long as orders are secured they are satisfied. With depression comes a very keen desire to know why the stream of orders is dammed up or slowed down to a trickle, and by the time we get over this trying period a large number of executives are going to know more about the fundamental facts of their business than they have ever known before.

The automotive industry has been blessed with the National Automobile Chamber of Commerce, National Automotive Equipment Association, National Automobile Dealers' Association and many state associations, all intelligent and energetic trade associations providing facts and figures for members to apply to their individual needs. By the end of the depression we are going to have a great many more trade associations like the ones we already have in the automotive field.

Now is the time for all trade associations to do valuable work. Our Iowa Automotive Merchants' Association is doing its share. We regret that some of our members feel their support is not needed except during legislative sessions. They forget that a good horse must be fed regularly. After our spring plowing and planting in the Legislature has been done and the weeds have been killed by cultivation, some of our members feel it is good business to "turn old Dobbin out along the roadside to forage for himself." This is the near attitude of the member who refuses dues to the association. Thank goodness all of them do not have such a benighted idea.

It costs some money to have our association (it would cost more not to have it) and to keep it on a working basis just as horses have to be fed corn, oats and hay in and out of working seasons. The intelligent farmer will not starve his horses. No sir! He keeps them in shape for harvest, fall plowing, marketing of crops, etc. It is an investment for him to do so. Your association must be fed. Send in your dues and help replenish the granary and help the association perpetuate the work it is doing for you.—**Walter Ferrell, Secretary-Manager Iowa Automotive Merchants' Association.**

New Dealer Appointments By States and Makes

NEBRASKA

Nash—Voltmer Nash Company, Falls City; Cerny Garage, Columbus.

Willys-Overland—J. B. Lawless, Hebron; King & Nelson, Tecumseh.

NEW JERSEY

Auburn—A. A. Behling, Pitman; H. J. Miller Auburn Company, Inc., Plainfield.

Reo—Elliott Motor Sales, Woodbury; Moore's Garage and Truck Company, Plainfield; J. R. Riggs, Ledgewood.

Nash—M. H. Apgar, Madison.

NEW YORK

Auburn—Theodore J. Suess, Lancaster; Edward L. Westervelt, Patchogue, L. I.; A. J. Hagerer, Springville; Long Motor Sales, Ellisburg.

Nash—Ogdensburg - Nash Company, Ogdensburg; George Popplewell, Canandaigua.

Willys-Overland—Dillenbeck's Garage, Fort Plain; Hardy-Nash Company, Malone; A. E. S. Garage, Mechanicville; Charles E. Folk, Tupper Lake; Sanderson's Garage, Fredonia; Medina Nash Company, Medina; Gardner's Service Station, Pleasantville; L. W. S. Garage, Suffern; Merle J. Williams, Spencer; Valley Motor Sales, Inc., Utica.

OHIO

Reo—Rays Auto Supply, Clyde; Reo Service and Sales Company, East Liverpool; Service Garage Company, Wooster; Waltz Motor Company, New Philadelphia; E. M. Fessenden, Kent; Kenton Oldsmobile Company, Kenton; Ramsden Auto Sales, Hillsboro; Walter Kattine Garage, Georgetown; Lee West Auto Sales, Greenfield; A. P. Motor Company, New Richmond; Kihn & Hassel, Chardon.

Nash—Falls Motors, Inc., Cuyahoga Falls; B. R. Zech, Greenville.

Willys-Overland—Ludwig E. Nestle Company, Bucyrus; New Pittsburgh Garage, New Pittsburgh; Liber Motor Company, Ravenna; Korn & Korn, Sidney; Thompson's Auto Supply, Paulding; A. T. Pickrel Motor Company, Urbana.

OREGON

Willys-Overland—Ray O'Donnell, Eugene; J. L. Chittim & Sons, St. Helena; Pilot Butte Motor Company, Bend.

PENNSYLVANIA

Auburn—Leidig Motor Sales, Bethlehem; Auburn-Cord Sales Company, Inc., Lancaster; A. F. Schultz & Co., Lansford.

Reo—J. E. Fitzgerald, Media; Tyson & Miller Motor Company, Royersford; B & B Motor Company, Inc., Bethlehem; C. C. Bickel, Pottstown; S. E. Teel, Bangor; Roddy's Garage, Latrobe; Evans Service Station, Lilly; Riverside Garage, Archbald; Carbondale Reo Company, Carbondale; Nanticoke Buick, Inc., Nanticoke; George Rutledge, Pittston; Wesley Harvey, Tunkhannock.

Nash—Eberline-Nash, Brookville.

Willys-Overland—Frank Campanella, Freeland; A. G. Franklin, Nicholson; Mean's Garage, Connellsville; Gill's Garage, Fairchance; A. V. Helm, Kittaning; Stewart F. Stilwell, Uniontown; Snyder Brothers & Baker, Inc., Beaver; Sam Shaneen Garage, Ridgway; Parvin Motor Company, Warren.

SOUTH CAROLINA

Willys-Overland—Joseph Miserendino, Charleston.

SOUTH DAKOTA

Auburn—Roy R. Jaeger, Watertown; Standard Garage, Huron.

TENNESSEE

Reo—Motor Service Company, Jackson.

Willys-Overland—Birch Arnold Auto Company, Dayton.

TEXAS

Auburn—McDaniel Motor Company, Texarkana.

Willys-Overland—G. C. Hall, Dawson; Clayton Brown, Ennis; Foster Motor Company, Dalhart; Monroe Smith Motor Company, Trinity.

VIRGINIA

Auburn—H. C. Nash, Portsmouth.

Willys-Overland—Bryant-Gravely Auto Company, Danville.

WASHINGTON

Auburn—Stebbins Service Station, Bremerton.

Willys-Overland—Roosevelt Garage, Roosevelt; William Klive, Hockinson.

WEST VIRGINIA

Reo—Meadows Motor Company, Normantown.

Willys-Overland—A. K. Lusk Motor Company, Mullens.

WISCONSIN

Auburn—W. H. Burns, Port Washington.

Willys-Overland—Harycki Brothers, Thorp; John Cooke, Bridgeport.

ALABAMA

Nash—Gentry Motor Company, Inc., Montgomery.

ARKANSAS

Nash—Market Street Motor Company, Hot Springss.

CALIFORNIA

Auburn—Fred Fudge, Glendale.

Graham-Paige—John N. Rocco, Sonora.

Nash—Larson & Parodi, Santa Cruz; Commercial Garage, Dunsmuir.

Willys-Overland—J. E. Gerhardt Company, Chico; W. B. Conniry, San Diego; Karl F. Autenrieth, Yreka.

CANADA

Nash—Paohals Motor Sales, Yorkton, Sask; H. Van Mol & Sons, Swan Lake, Man.; Chanin & Howell, Holand, Man.; J. E. Macartney & Son, Crystal City, Man.; Kelly Johannson, Arborg, Man.; Isabey Brothers, Hartney, Man.; Ernest Green, Napinka, Man.; W. H. Post, Ridgeville, Man.

COLORADO

Marmon—Folkrod Motor Company, Denver.

CONNECTICUT

Nash—Mason F. Wetherell, South Manchester.

DELAWARE

Willys - Overland—Brandywine Motors, Inc., Wilmington.

GEORGIA

Graham - Paige—Auto Storage Company, Inc., Albany.

IDAHO

Nash—Fred Rich Motor Company, Arco.

Reo—Reynolds Motor Company, Coeur d'Alene.

INDIANA

Reo—Schnake Motor Company (distributor), Evansville.

Willys-Overland—Swain Brothers, Princeton; Driver Sales Company, Indianapolis; Chase Motor Sales, Lafayette.

IOWA

Auburn—Gralnek Motor Sales Company, Fort Dodge; Nelson Auto Exchange, Atlantic.

Graham-Paige—Connolly & Graham, Dubuque.

MULLINS STAMPINGS
FOR THE AUTOMOBILE INDUSTRY

WRITE!
Mullins Mfg. Corp., Salem, Ohio
332 So. Michigan Ave., Chicago.
General Motors Building, Detroit.

NEW PASSENGER CAR REGISTRATIONS, FIRST

Months	Auburn	Austin	Buick	Cadillac	Chevrolet	Chrysler	Cord	De Soto	De Vaux	Dodge	Durant	Essex	Ford	Franklin	Graham	Hudson	Hupmobile	La Salle	Lincoln
January	672	*	7792	580	42689	3485	139	2584	*	5046	2015	5391	70257	616	2036	2325	2166	794	331
February	910	*	7284	468	53753	3173	137	3104	*	5397	1957	6231	88916	705	1839	2875	1745	780	272
March	1447	*	10619	831	73585	5800	218	4457	*	7466	2608	8953	122957	964	2638	4098	2899	1203	437
April	1744	*	14358	1317	83372	8235	290	4822	*	9375	2951	9864	146112	1034	4645	4482	3458	1591	623
May	1619	*	14210	1344	79775	8752	275	4346	*	8843	2607	8493	143535	794	4655	4136	3189	1583	541
June	1065	43	8551	1036	58107	6951	174	3794	*	6301	2004	5320	112749	610	3488	2635	2572	1023	369
July	991	1139	8981	1055	56129	6160	188	3640	*	5764	2260	4650	109372	526	3195	2420	2728	822	352
Totals	8448	1182	71795	6631	447410	42556	1421	26747	*	48192	16402	48902	793898	5249	22496	22971	18757	7796	2925

*Not in production at that time. †Viking combined with Oldsmobile.

COMPLETE NEW PASSENGER CAR

This table is repeated for comparative purposes only.

States	Auburn	Austin	Buick	Cadillac	Chevrolet	Chrysler	Cord	De Soto	De Vaux	Dodge	Durant	Essex	Ford	Franklin	Graham	Hudson	Hupmobile	La Salle
Ala., 1930		3	29	3	576	13		5		19		13	867		11	8	9	4
Ariz., '30	1		30		132	12	1	19		23	5	5	299	1	7	2	8	1
Ark., '30	5	4	49	5	1337	95	1	29		105	26	31	1912	3	24	6	8	11
Calif., '30	83	105	412	97	3208	365	22	349		389	382	155	7478	37	280	147	201	55
Col., '30	5	1	90	3	613	40	1	29		83	37	45	877	2	25	24	20	7
Conn., '30	21	21	277	28	696	119	4	136		119	15	119	1464	16	81	65	76	36
Dela., '30	2	2	33	5	152	23		6		4	13	12	293		1	6	10	1
Fla., '30	11	16	48	6	655	59	2	19		34	3	49	1108	6	44	22	20	8
Ga., 1930	5	9	15	2	365	20	2	11		20	5	11	611	1	11	8	6	2
Idaho, '30	1	8	26		221	20		16		19	19	11	371	1	16	6	4	
Ill., 1930	75	34	562	72	3495	411	41	269		346	103	242	7270	50	175	153	280	66
Ind., '30	24	19	141	22	1018	84	10	116		108	31	108	2167	5	62	54	40	11
Iowa, 1930	13	15	90	7	2021	119	3	39		149	79	92	2709	5	66	45	54	9
Kans., '30	4	12	159	7	1903	91	1	46		152	37	112	2671	1	42	63	24	6
Ky., 1930	6	5	45	4	713	79	3	45		77	14	61	1255	4	15	19	34	5
La., '30	5	12	50	8	697	34	1	45		58	8	25	1123	4	17	14	13	1
Maine, '30	4	9	66	9	414	61		35		54	22	107	747	3	20	31	13	5
Md., 1930	4	12	123	21	868	79	2	19		36	15	46	1375	8	40	23	39	12
Mass., '30	33	40	339	66	1567	220	7	84		292	56	377	4478	28	104	130	141	42
Mich., '30	9	82	468	58	1586	171	8	84		145	63	244	6570	4	110	117	69	35
Minn., '30	16	33	140	14	1777	158		47		105	46	102	2772	4	93	53	79	26
Miss., '30	1	4	28	1	651	39		13		29	2	10	859	1	14	3	7	2
Mo., 1930	11	35	133	8	1242	91	2	47		125	22	95	1769	8	67	29	35	22
Mont., '30	5		21	3	322	34		21		38	26	28	426	2	14	15	12	2
Neb., 1930	5	3	69	1	1041	84	2	17		86	22	28	1576	1	28	10	14	2
Nev., 1930	8	5	28	1	110	38		12		29	8	12	207	1	3	11	6	3
N. H., '30	10		40	4	221	28		14		21	11	29	473		17	16	7	2
N. J., 1930	65	66	554	65	1543	272	4	118		202	74	199	3731	27	121	111	118	48
N. M., '30			55	2	289	18	1	17		28	5	7	375		8	8	1	
N. Y., '30	326	137	1935	241	5590	1060	29	571		736	248	849	13741	141	538	461	477	135
N. C., '30	3	12	69	7	958	92	1	20		66	6	44	1854	2	27	30	6	12
N. D., '30	1	2	12		352	17		10		19	13	6	497		12	4	1	
Ohio, 1930	57	91	387	80	2435	266	10	224		254	101	268	5558	32	176	124	159	53
Okla., '30	6	13	291	15	1973	113	5	62		238	48	47	2742	8	50	27	19	14
Ore., '30	4	34	125	1	607	62	1	55		72	108	63	1256	5	75	42	54	5
Pa., 1930	75	145	651	87	3270	710	7	332		516	174	393	6660	49	331	229	328	93
R. I., '30	7	1	91	9	306	71	1	69		36	8	34	722	6	22	21	21	12
S. C., '30		4	28		524	36		23		18	3	18	895	3	9	7	9	2
S. D., '30	1	3	14		643	29		13		58	40	20	897		14	17	13	2
Tenn., '30	4	20	70	9	1200	59		40		87	11	39	2040	5	41	19	26	9
Tex., '30	9	33	355	21	3311	185	2	174		238	57	65	4816	9	73	36	58	17
Utah, '30	5	10	33	3	224	11	3	16		20	21	25	430	5	16	10	2	2
Vt., 1930	4	5	32	1	154	35	2	6		17	5	28	298	1	14	14	14	5
Va., 1930	7	14	111	9	1202	73	1	55		106	22	54	1798	5	31	29	29	6
Wash., '30	20	9	189	10	832	148	4	94		90	120	60	1885	10	53	30	54	8
W. V., '30	9	9	59	7	809	81	1	38		109	25	83	1298	2	71	26	23	5
Wis., '30	18	24	290	24	1781	165	2	109		142	85	144	2794	12	91	81	52	9
Wyo., '30	1		13		129	23	1	3		18	3	10	228	2	4	3	5	1
D. C., '30	2	18	106	9	396	67		19		29	13	25	1130	6	31	11	30	8
Totals, '30	991	1139	8981	1055	56129	6160	188	3640	*	5764	2260	4650	109372	526	3195	2420	2728	822

*Not in production. Combined report Oldsmobile and Viking.

3 DISTRIBUTORS, 20 DEALERS NAMED BY HUPP IN AUGUST

Detroit, Sept. 4.—During August twenty new dealers and three new distributors were signed by the Hupp Motor Car Corporation, the company announced today.

The new distributing points are Tulsa, Okla.; Oklahoma City, Okla., and Seattle, Wash. In Tulsa the Stutz Motor Company, Inc., is the new distributor, and in Oklahoma City it is the DeBolt-Harris Motor Sales, Inc. The Transport Corporation, former Spokane representatives only, has now assumed the Seattle distributorship, continuing its former business connections.

By states the new dealers are:

Hooper Motor Company, Selma, Ala.; M. L. Sarsfield, San Diego, Cal.; Krieger & St. Germaine, Norwich, Conn.; John S. Berry, Inc., Lakeland, Fla.; Newhouse Auto Company, Rushville, Ind.; B. B. Welch, Owenton, Ky.; Cooper & Shaw, Saginaw, Mich.; L. A. Eastman Motor Sales, Wyandotte, Mich.; Garfield Motor Sales, Inc., Garfield, N. J.; William B. Lackey, Long Branch, N. J.; Arthur C. Megill, Forest Hills, L. I., N. Y.; Robert C. Weissmantel & Son, Inc., Jamaica, L. I. N. Y.; Chester Reid & Harry S. Kent, Little Neck, L. I., N. Y.; Charles Davis, Vernon, N. Y.; Archie D. Eastman, Washington Mills, N. Y.; T. & B. Super Service Company, Fayetteville, N. C.; T. C. Moore, Bridgeport, O.; Frutchey Bros., Sayre, Pa.; Rieger's Battery Station, Austin, Tex., and W. A. Whitehead, Cedar City, Utah.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

WHITE NOMINATED S. A. E. COUNSELOR

Muncie, Ind., Sept. 4.—Samuel O. White, chief engineer of the Warner-Gear Company a division of Borg-Warner Corporation, has been nominated counselor of the Society of Automotive Engineers for 1932, it was announced today.

For a number of years he has been active in S. A. E. works as a member of the transmission division of the standards committee. In 1924 he was made vice-chairman of the committee and chairman from 1926 to 1928. His first activities started in 1919.

White has been with Warner-Gear in his present capacity for twenty-two years. He was graduated from Perdue University in 1904 with a degree of B. M. E. Immediately after graduation he became chief draftsman for the Apperson Brothers Auto Company, Kokomo, Ind., and remained with the organization until January 1908, when he became checker and designer for the Studebaker Auto Company, South Bend, Ind. After one year with Studebaker he became affiliated with Warner-Gear.

CLEVELAND EMPLOYMENT GAINS 1.3% IN AUGUST

Cleveland, Sept. 4.—Employment in Cleveland during August showed an increase of 1.3 per cent. over July according to employment figures of Chamber of Commerce. Index is compiled from 100 representative firms and 11 firms of the total stated they anticipated further increases in September. Index in August stood at 81.3 against 80.3 in July and 96.1 in August, 1930. Last year in August the index showed a drop of 3.3 per cent. from July.

SEVEN MONTHS OF 1930 BY MAKES AND MONTHS

Months	Marmon	Nash	Oakland	Oldsmobile	Packard	Peerless	Pierce-Arrow	Plymouth	Pontiac	Reo	Studebaker	Stutz	Viking	Whippet	Willys	Willys-Knight	Miscellaneous	Totals
January	1053	3657	1489	3326	1827	429	431	3182	5036	807	3975	116	178	1937	2039	1164	530	180.094
February	957	2891	1920	4345	1623	433	540	2570	6010	921	3699	94	161	1960	2523	1070	481	211.645
March	1365	4812	3007	6564	2360	500	728	4119	8662	1271	5415	87	286	2639	3761	1427	641	298.824
April	1643	6275	3046	7501	3038	660	912	6262	11043	1429	6458	76	406	2714	4909	1851	567	357.063
May	1430	5819	2852	6865	2940	483	864	9243	8943	1077	6291	78	342	2367	4472	1782	496	345.041
June	1025	4913	1901	4829	4008	332	628	8368	5776	744	5107	60	181	1529	3045	1299	405	260,942
July	1080	5227	1736	4901	3261	306	534	8089	5324	791	6001	70	†	1400	3070	1518	417	254,097
Totals	8553	33594	15951	38332	19057	3043	4637	41833	50794	7040	36946	581	1554	14546	23819	10111	3537	1,907,706

REGISTRATION STATISTICS, JULY, 1930

July, 1931, statistics were published in the September 3 issue

States	Lincoln	Marmon	Nash	Oakland	Oldsmobile	Packard	Peerless	Pierce-Arrow	Plymouth	Pontiac	Reo	Studebaker	Stutz	Whippet	Willys	Willys-Knight	Miscellaneous	Totals
Ala., 1930	3	2	4		7	7		1	28	9	2	15		5	4			1,647
Ariz., '30	1	1	18	5	17	4	3		15	15		30	1	6	15	11		688
Ark., '30	2	7	31	10	28	4		2	115	50	3	11		8	11	3	1	3,937
Calif., '30	27	82	345	104	197	292	22	47	244	249	47	648	4	29	125	146	35	16,408
Col., '30	1	12	55	21	28	22	1	3	80	35	3	53	1	10	32	12	2	2,273
Conn., '30	3	27	106	58	93	81	7	19	104	104	25	119	2	10	37	27	12	4,127
Dela., '30		3	2	1	8	7		2	9	23		11		1	6	3		639
Fla., '30	2	11	24	20	16	23		4	37	36	9	25		9	23	6		2,355
Ga., 1930	2	2	17	5	16	11		1	18	11	1	18		5	10	5		1,226
Idaho, '30		1	17	2	8	1			31	14	1	16		11	8	4		853
Ill., 1930	27	73	411	134	373	273	27	30	453	418	59	519	3	69	201	100	69	16,883
Ind., '30	9	47	69	30	117	39	5	5	201	119	10	160	4	22	52	9	4	4,922
Iowa, 1930	4	27	111	28	131	29	1	4	260	155	12	117		63	114	26	4	6,601
Kans., '30	2	10	93	36	106	19	2	6	202	182	9	77	10	47	84	22	1	6,239
Ky., 1930	5	9	28	10	18	22	2	3	139	47	17	49	2	25	41	12	3	2,816
La., '30	1	15	61	6	23	7	1	3	48	35	7	39		7	6	4	3	2,361
Maine, '30	2	6	65	20	53	19	5	1	134	82	9	53		17	35	17		2,118
Md., 1930	4	7	55	12	64	42	2	6	122	72	9	80		18	32	7	15	3,269
Mass., '30	18	53	306	60	190	212	31	40	253	220	49	294	3	35	82	90	18	9,958
Mich., '30	12	34	91	52	246	123	4	8	332	161	52	203	1	29	72	23	9	11,275
Minn., '30	11	18	90	50	110	99	1	6	350	165	17	137		85	149	34	3	6,790
Miss., '30			41	4	7	3			13	13	1	19		7	2	5		1,779
Mo., 1930	15	15	93	23	104	65	1	13	170	92	15	107		37	58	11	17	4,577
Mont., '30	1	14	37	12	27	4			60	31	10	29		13	29	14		1,250
Neb., 1930		12	31	12	52	16	1		142	61	2	70	1	41	52	16	1	3,499
Nev., 1930	1	3	9	1	6	8			19	5		16		1	1	3	2	557
N. H., '30	1	7	45	9	28	11	2	1	27	29	10	36		3	20	8	1	1,131
N. J., 1930	15	46	264	73	254	178	22	41	178	200	34	285	4	22	99	73	22	9,128
N. M., '30	1	1	18	2	13	5		1	19	7	1	7		5	8	2		904
N. Y., '30	97	200	1199	304	995	736	57	130	1072	824	129	1069	17	226	470	363	81	35,184
N. C., '30	3	6	23	9	21	11			96	63	1	25		22	21	7		3,517
N. D., '30		7	15	6	22	6			48	27	1	21		18	18	5		1,140
Ohio, 1930	21	72	238	101	256	153	33	23	501	305	38	288	7	84	209	132	38	12,774
Okla., '30	2	9	56	22	57	66		12	149	100	6	60	1	42	74	10	4	6,341
Ore., '30	2	22	46	25	55	17		3	83	55	24	73		4	32	23	4	3,037
Pa., 1930	15	97	436	151	463	314	33	51	894	385	55	448	2	85	295	101	40	17,915
R. I., '30	2	4	35	11	19	32	6	12	48	46	13	35	1	4	18	16	3	1,742
S. C., '30		3	14	5	10	6		1	47	22	2	10		2	1			1,702
S. D.,'30		7	24	15	74	8		2	97	30	7	37		34	39	3		2,141
Tenn., '30	4	2	29	17	54	32	2	8	90	48	5	59	2	32	44	11	4	4,122
Tex., '30	14	28	96	39	93	58	3	20	278	188	34	164	2	40	75	32	5	10,628
Utah, '30		2	30	9	12	14		1	11	16	1	16		2	4			954
Vt., 1930	1	2	19	12	16	6		1	30	17	4	19		11	18	4		795
Va., 1930	3	17	31	27	37	28	6	5	121	110	5	45		28	50	16		4,081
Wash., '30	6	8	75	39	99	28	6	3	159	86	23	119		21	50	38	7	4,383
W. V.,'30	2	14	69	43	43	28		3	144	79	7	56	1	43	71	20	1	3,279
Wis., '30	5	22	216	76	161	55	11	9	341	231	15	163	1	58	163	29	6	7,385
Wyo., '30		2	7	2	11				29	4		6		1	3	3		512
D. C., '30	5	11	32	23	63	37	9	3	48	48	7	45		3	7	12	2	2,235
Totals, '30	352	1080	5227	1736	4901	3261	306	534	8089	5324	791	6001	70	1400	3070	1518	417	254,097

Priced for quick turnover

Increase Profits by selling

PINES

custom-built spare tire and spare wheel locks *for*

WILLYS-KNIGHT
WILLYS 6 and 8
STUDEBAKER
HUPMOBILE
CHEVROLET
PLYMOUTH
FRANKLIN
CHRYSLER
MARMON
GRAHAM
PEERLESS
DE SOTO
AUBURN
DURANT
AUSTIN
DODGE
FORD

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PINES
WINTERFRONT COMPANY
Dept. "L" 1151 N. Cicero Ave.
CHICAGO, ILL.

WEEKLY BUSINESS INDICATORS

SURVEY OF CURRENT BUSINESS

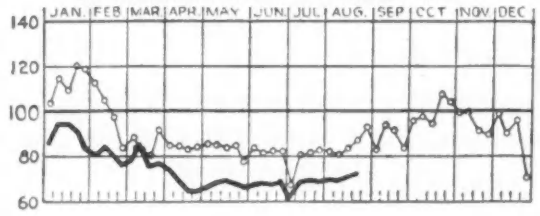
UNITED STATES DEPARTMENT OF COMMERCE

DATA PLOTTED, WHERE AVAILABLE FOR WEEK ENDING AUG. 29, 1931

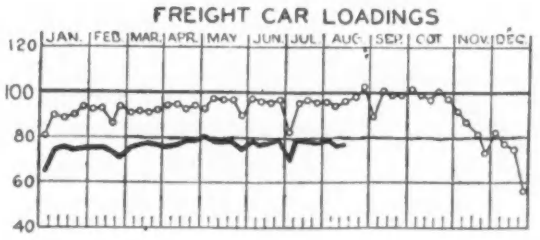
WEEKLY AVERAGE, 1923-1925, INCLUSIVE=100

LEGEND
1930
1931

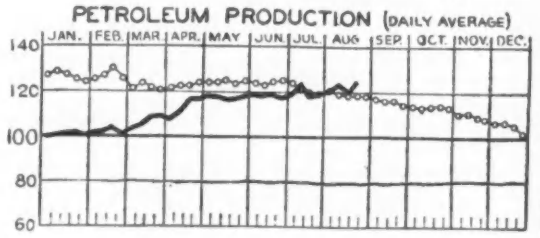
BITUMINOUS COAL PRODUCTION



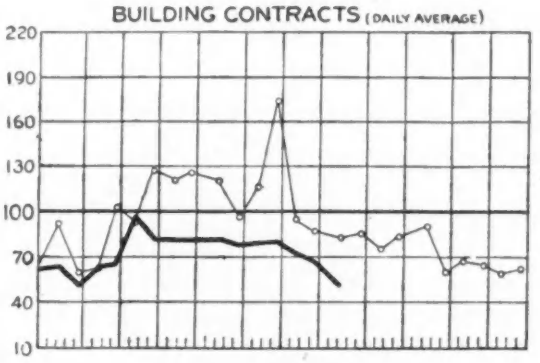
FREIGHT CAR LOADINGS



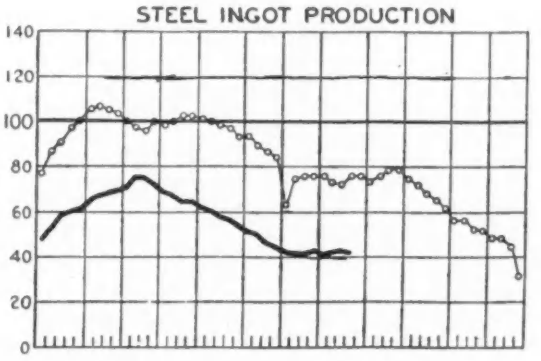
PETROLEUM PRODUCTION (DAILY AVERAGE)



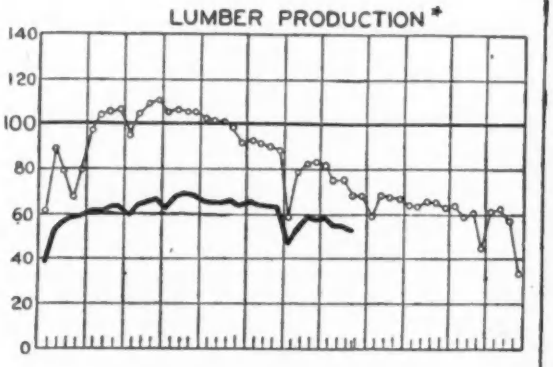
BUILDING CONTRACTS (DAILY AVERAGE)



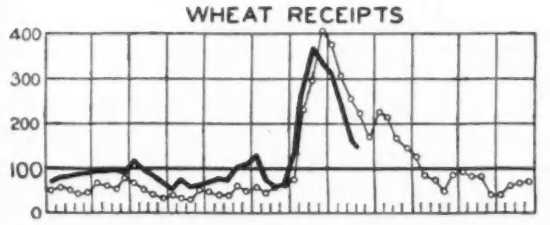
STEEL INGOT PRODUCTION



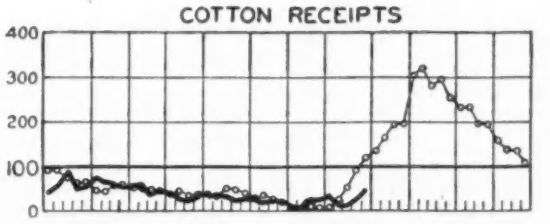
LUMBER PRODUCTION *



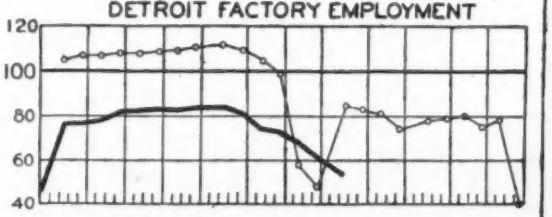
WHEAT RECEIPTS



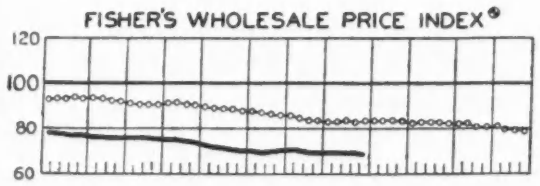
COTTON RECEIPTS



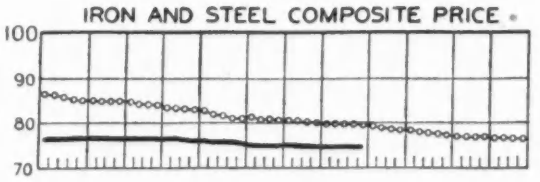
DETROIT FACTORY EMPLOYMENT



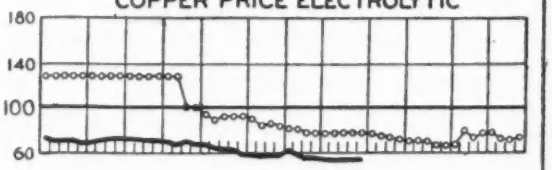
FISHER'S WHOLESALE PRICE INDEX ⊙



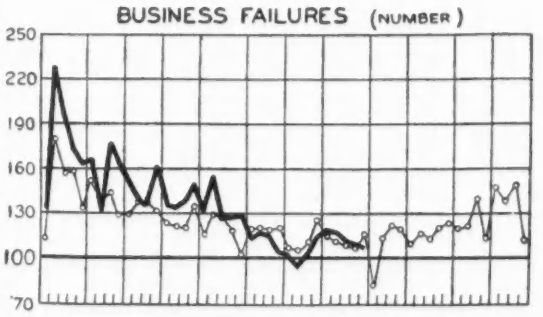
IRON AND STEEL COMPOSITE PRICE *



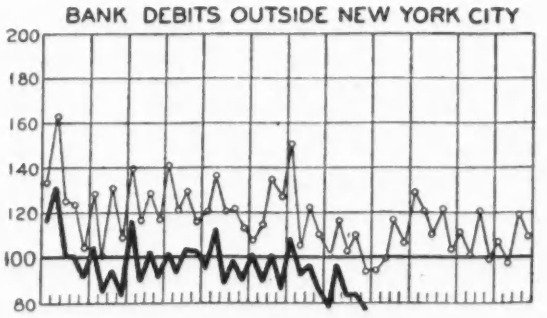
COPPER PRICE ELECTROLYTIC



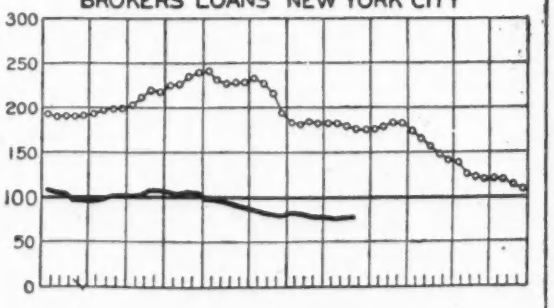
BUSINESS FAILURES (NUMBER)



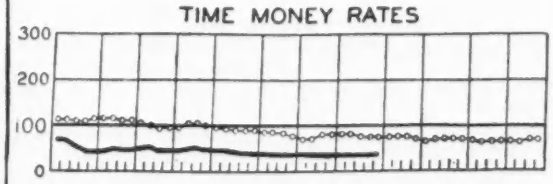
BANK DEBITS OUTSIDE NEW YORK CITY



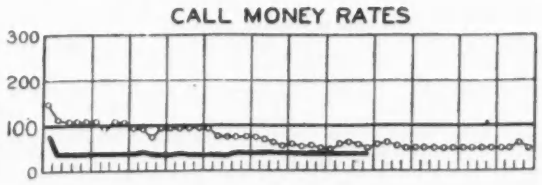
BROKERS' LOANS NEW YORK CITY



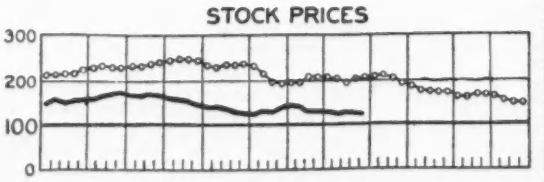
TIME MONEY RATES



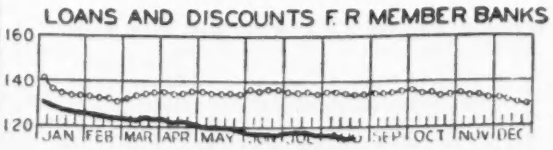
CALL MONEY RATES



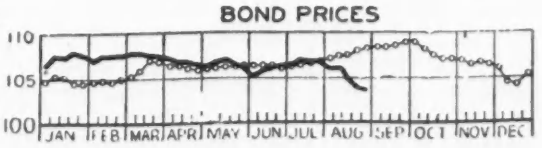
STOCK PRICES



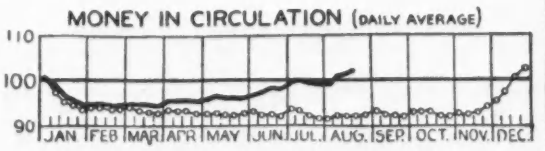
LOANS AND DISCOUNTS F. R MEMBER BANKS



BOND PRICES



MONEY IN CIRCULATION (DAILY AVERAGE)



* RELATION TO WEEKLY AVERAGES 1928-1930 PER WEEK SHOWN. ⊙ RELATIVE TO 1926=100

COUNTY MOTOR SALES ADDS OAKLAND-PONTIAC

Camden, N. J., Sept. 4.—County Motor Sales, 1211 Haddon Ave., is the newest dealership in Camden. The Oakland Motor Car Company announced the appointment of this firm as Oakland-Pontiac dealer for this territory.

The owner of County Motor Sales is Ferdinand Kloidt, for many years proprietor of Kloidt Motors in Collingswood, representing Oldsmobile. The opening of County Motor Sales through the acquisition of Oakland-Pontiac does not in any way affect Kloidt Motors in Collingswood, as the sales and service branch will continue to operate as usual. Bertram Kloidt, son of the owner and at present general manager of the Collingswood agency, will assume the same capacity for both organizations.

PARMELEE OPENS TAXI GARAGE IN NEW YORK

New York, Sept. 4.—A new taxicab garage has been put into service at 162 Christopher St. by the Parmelee System, which operates 4,500 taxicabs from other garages located throughout Greater New York. Located near the heavy downtown traffic, opposite ferries and steamship docks and near the new elevated roadway extension of West Street, the new unit is the only taxicab garage in lower west side New York.

INDIA TIRE OPENS NEW CHARLOTTE, N. C., BRANCH

Charlotte, N. C., Sept. 4.—Charlotte became the Carolina distribution point for the India Tire and Rubber Company of Atlanta, Ga., and Akron, O., with the opening of headquarters at 400 West 2d St., this city.

S. A. E. PROGRAMS FOR COMING FALL

(Continued from Page 1)

J. L. Dostall, Holley Permanent Molding Machine, Inc.

2 p. m.—Plant visit. Transportation will be provided from the hotel and return.

6.30 p. m., ballroom—National production dinner, toastmaster, A. K. Brumbaugh, White Motor Company. Speaker to be announced later. "Electrons at Work and at Play," Phillips Thomas, Westinghouse Electric and Manufacturing Company.

Section meetings of the society which will be held during the month of September are announced as follows:

Cleveland—September 10

Big Ten Alumni Club; golf tournament 3 p. m.; dinner.

Indiana—September 24

Hotel Severin, Indianapolis; dinner 6.30 p. m.; meeting 8 p. m.

Review of air races and gold cup race, with special reference to developments in the industries.

Metropolitan—September 24

A. W. A. clubhouse, 353 West 57th St., New York city; dinner 6.30 p. m. Aeronautic meeting.

New England—September 9

Hotel Kenmore, Boston; dinner 6.30 p. m.; meeting 8 p. m.

"Relations of the Commonwealth to Truck and Bus Operators," Morgan T. Ryan, registrar of motor vehicles.

Service station equipment for safety drives.

Northwest—September 11 and 12

Seattle, Wash., September 11.

"Electric Nitriding Furnaces," H. M. Gustafson, General Electric Company.

Vancouver, B. C., September 12.

"Flame," Prof. F. G. Baender, Oregon State College.

Oregon—September 4

Multnomah Hotel, Portland; dinner 6.30 p. m.; entertainment; motion pictures.

Speakers—H. W. Roberts, Roberts Motor Truck Company, and Howard Smith, Plymouth Motors.

Philadelphia—September 23

Philadelphia Auto Trade Association, 715 North Broad St.; dinner 6.30 p. m.

Smoker or Get-Together Meeting.

TRUCKING GROUP PLANS TO FIGHT RESTRICTIONS

Springfield, Mass., Sept. 4.—The Transport Associates, organization of truckers sponsored by the Chamber of Commerce, is not satisfied with the apparent intent of restricting trucks in streets throughout the city, it was learned last night.

It is understood that the trucking interests will not be agreeable to any restriction of trucks below the 3½ ton capacity.

FIRESTONE WILL BUILD STATION IN TRENTON

Trenton, N. J., Sept. 4.—The city commissioners have granted the application of the Firestone Company of Akron, O., to erect a service station at West Hanover and North Willow Streets. The company plans to erect a large store and station on that site, it was stated at the meeting. The approval was in the face of an unfavorable report presented by Chief Walter and the Police Traffic Bureau, which stated that the erection of the station would increase traffic hazards.

CLIP-ON COMPANY REPORTS SEVERAL LARGE ORDERS

Oswego, N. Y., Sept. 4.—The Clip-On Company, Inc., of this city of which Harry M. Lasky is president, and which occupies space in the Nu-Type Tool Company's plant, is making fine progress, according to Mr. Lasky, who states that several large orders have been received. The outlook for the firm is exceptionally bright, according to Mr. Lasky.

H. N. BRADFORD RESIGNS

Des Moines, Ia., Sept. 4.—H. N. Bradford, manager of the Ford Motor Company assembly plant here since December, 1929, has resigned. His future plans have not been announced. He has been associated with the Ford company several years, coming here from Chester, Pa., where he was in charge of the export branch.

Passenger Car Equipment and Accessories

NAME AND MODEL	Speedometer	Clock	Fuel Gauge on Dash	Lock	Spark Plugs	Battery	Heat Indicator	*Cig. Lighter	Smoking Set	Vanity Set	Make of Body Finish Used	Stop Light	Parking or Side Light	Safety Glass	Heater	Front Bumper	Rear Bumper	Wire Wheels	Shock Absorber
Auburn 8-98	Ste	—	K-S	Ele	Cha	USL	—	Cas	No	No	Mim	Ind	Ind	—	—	Cen	Cen	Day	Lov
Austin	NE	—	K-S	BS	Cha	USL	—	—	—	—	Duc	—	—	—	—	Cen	Cen	—	Own
Buick 8-50	AC	—	K-S	Her	AC	**	AC	—	Tern	—	Duc	Gui	Gui	—	—	Wol	Wol	K-H	Lov
Buick 8-60	AC	—	K-S	Her	AC	**	AC	—	Tern	—	Duc	Gui	Gui	—	—	Wol	Wol	K-H	Lov
Buick 8-80	AC	—	K-S	Her	AC	**	AC	—	Tern	—	Duc	Gui	Gui	—	—	Wol	Wol	K-H	Lov
Buick 8-90	AC	—	K-S	Her	AC	**	AC	—	Tern	Tern	Duc	Gui	Gui	—	—	Wol	Wol	K-H	Lov
Cadillac V-8	AC	Jag	Mot-M	DR	AC	DR	AC	Cas	Tern	Tern	Duc	Hal	Hal	Sec	Kel	Eat	Eat	K-H	Lov
Cadillac V-12	AC	Jag	Mot-M	DR	AC	Ex	AC	Cas	Tern	Tern	Duc	Hal	Hal	Sec	**	Eat	Eat	K-H	Lov
Cadillac V-16	AC	Jag	Mot-M	DR	AC	Ex	AC	Cas	Tern	Tern	Duc	Gui	Hal	Sec	*	Gen	Gen	K-H	Lov
Chevrolet	AC	—	AC	DR	AC	*	AC	—	Tern	—	Duc	Gui	Gui	—	*	†Own	Own	Own	Lov
Chrysler 6	NE	—	Mot-M	DR	AC	Wil	Yes	—	—	—	Ditz	Cor	Cor	Opt	—	—	—	—	Lov
Chrysler 8	NE	—	Mot-M	DR	AC	Wil	Mot-M	—	—	—	Ditz	Hal	Hal	Opt	—	—	—	—	Lov
Chrysler Imp. 8	AC	—	Mot-M	DR	AC	Wil	Mot-M	Cas	—	—	Ditz	Hal	Hal	Opt	—	—	—	—	Hou
Cord Front Drive	Ste	No	Mot-M	DR	Cha	USL	Ster	Cas	GR	No	Mur	Ind	Ind	—	No	ASP	ASP	Day	Hou
De Soto Six	NE	No	Mot-M	DR	AC	Wil	Yes	No	Yes	Yes	Duc	Cor	Hal	—	No	Yes	Yes	—	Lov
De Soto Eight	NE	No	Mot-M	DR	AC	Wil	Mot-M	No	Yes	Yes	Duc	Cor	Hal	—	No	Yes	Yes	—	Lov
De Vaux Six	Ste	No	Mot-M	Yale	Cha	Pre	Mot-M	No	No	No	Duc	JB	JB	—	No	Gen	Gen	MotoW	Hou
Dodge Six	NE	—	AC	DR	AC	Wil	AC	—	VS	VS	Ditz	Cor	Cor	Opt	—	Yes	Yes	Budd	Lov
Dodge Eight	NE	—	AC	DR	AC	Wil	AC	—	VS	VS	Ditz	Cor	Cor	Opt	—	Yes	Yes	Budd	Lov
Durant 610	NE	No	Mot-M	Aut-L	Cha	USL	Mot-M	NE	No	No	Rin	Cor	No	—	—	Bad	Bad	MotoW	Mon
Durant 612	NE	No	Mot-M	Aut-L	Cha	USL	Mot-M	NE	No	No	Rin	Cor	No	—	—	Eat	Eat	MotoW	Mon
Durant 614	NE	No	Mot-M	Aut-L	Cha	USL	Mot-M	NE	GR	No	Rin	Cor	Yes	—	—	Eat	Eat	MotoW	Mon
Durant 619	NE	No	Mot-M	Aut-L	Cha	USL	Mot-M	No	No	No	Rin	Cor	No	—	—	Bad	Bad	MotoW	Mon
Essex Super Six	Ste	—	Mot-M	Ele	AC	Ex	Mot-M	—	Yes	—	Ditz	JB	JB	—	—	Own	Own	†MotoW	Mon
Ford A	Var	—	Own	Ele	Cha	Own	—	—	—	—	—	Own	—	Tri	—	Own	Own	Own	Hou
Fr'klin S 15 Trans.	NE	Jag	K-S	DR	Cha	USL	—	Cas	*	GR	*	Cor	Cor	**	—	CG	CG	MotoW	Lov
Fr'klin S 15 De L.	NE	Wal	K-S	DR	Cha	Nat	—	Cas	*	GR	*	Cor	Cor	**	—	CG	CG	MotoW	Lov
Graham Pros. 6	NE	—	K-S	Her	Cha	Wil	Mot-M	—	—	—	*	Hal	Own	—	—	ASP	ASP	MotoW	Lov
Graham Stan. 6	NE	—	K-S	Her	Cha	Wil	Mot-M	—	GR	—	*	Hal	JB	LOF	—	ASP	ASP	MotoW	Lov
Graham Sp. 6	NE	—	K-S	Her	Cha	Wil	Mot-M	—	GR	—	*	Hal	JB	LOF	—	ASP	ASP	MotoW	Lov
Graham Sp. 8	NE	—	K-S	Her	Cha	Wil	Mot-M	—	GR	—	*	Hal	JB	LOF	—	ASP	ASP	MotoW	Lov
Graham Cust. 8	NE	*	K-S	Her	Cha	Wil	Mot-M	Cas	VS	—	*	Hal	JB	LOF	—	ASP	ASP	MotoW	Lov
Hudson Greater 8	Ste	—	Mot-M	Ele	AC	Ex	Mot-M	—	Yes	—	Ditz	Hal	Hal	Dup	—	Own	Own	†MotoW	Gab
Hupmobile Cen. 6	Ste	—	Mot-M	Ele	Cha	Wil	Mot-M	—	VS	—	Val	Cor	Cor	LOF	—	—	—	K-H	Gab
Hupmobile Cen. 8	Ste	—	Mot-M	Ele	Cha	Wil	Mot-M	—	VS	—	Val	Hal	Hal	LOF	—	—	—	K-H	Gab
Hupmobile U	Ste	—	Mot-M	Ele	Cha	Wil	Ster	Cas	VS	—	Val	Hal	Hal	LOF	—	—	—	K-H	Gab
Hupmobile H	Ste	—	Mot-M	Ele	Cha	Wil	Ster	Cas	VS	—	Val	Hal	Hal	LOF	—	—	—	K-H	Gab
Hupmobile C	Ste	—	Mot-M	Ele	Cha	Wil	Ster	—	VS	—	Val	Hal	Hal	LOF	—	—	—	K-H	Gab
La Salle V-8	AC	Jag	AC	DR	AC	DR	AC	Cas	Tern	Tern	Duc	Hal	Hal	Sec	—	Eat	Eat	K-H	Lov
Lincoln 8	NE	Thom	K-S	Her	Cha	Ex	Mot-M	Cas	Cuno	Yes	*	Hal	Own	Tri	—	Bif	Bif	Own	Hou
Marmon 70	Ste	No	Mot-M	DR	Cha	Nat	Mot-M	No	No	No	Val	Cor	Cor	Opt	No	Gen	Gen	Day	Gab
Marmon 88	NE	Ster	Mot-M	DR	Cha	Ex	Mot-M	Cas	Yes	Yes	Val	Cor	Cor	Dup	No	Gen	Gen	Day	Gab
Marmon 16	—	Ster	Mot-M	DR	Cha	Ex	Mot-M	Cas	Yes	Yes	Ditz	Hal	Hal	Dup	No	Gen	Gen	Day	Gab
Nash Nine 60	Ste	—	K-S	Her	AC	USL	K-S	—	Tern	—	*	**	**	Opt	—	Bad	Bad	†MotoW	Lov
Nash Nine 70	Ste	—	K-S	Her	AC	USL	K-S	—	VS	—	*	**	**	Opt	—	Bad	Bad	†MotoW	Lov
Nash Nine 80	Ste	—	K-S	Her	AC	USL	K-S	—	VS	—	*	**	**	Opt	—	Eat	Eat	†MotoW	Lov
Nash Nine 90	Ste	Borg	K-S	Blos	AC	Ex	K-S	Cas	VS	—	*	**	**	Opt	—	Eat	Eat	†MotoW	Lov
Oakland 8	AC	—	AC	BS	AC	DR	—	—	Tern	Tern	Duc	Gui	Gui	—	—	Own	Own	MotoW	Lov
Oldsmobile	AC	—	AC	DR	AC	Wil	AC	—	Tern	—	Duc	Gui	—	—	—	—	—	MotoW	Lov
Packard 901	NE	Jag	K-S	—	A C	Pre	Mot-M	Cas	—	—	Own	Hal	—	LOF	No	Cen	Cen	MotoW	Lov
Packard 902	NE	Jag	K-S	—	A C	Pre	Mot-M	Cas	—	—	Own	Hal	—	LOF	No	Cen	Cen	MotoW	Lov
Packard 903	NE	Jag	K-S	—	A C	Pre	Mot-M	Cas	—	—	Own	Hal	—	LOF	No	Cen	Cen	MotoW	Lov
Packard 904	NE	Jag	K-S	—	A C	Pre	Mot-M	Cas	—	—	Own	Hal	—	LOF	No	Cen	Cen	MotoW	Lov
Peerless Stand. 8	AC	—	Mot-M	BS	Cha	Wil	Mot-M	Cas	—	No	Val	Cor	Cor	Dup	No	Cen	Cen	Bimel	Gab
Peerless Mast. 8	AC	Ster	Mot-M	BS	Cha	Wil	Mot-M	Cas	—	No	Val	Cor	Cor	Dup	—	Eat	Eat	Bimel	Gab
Peerless Cust. 8	AC	Ster	Mot-M	BS	Cha	Wil	Mot-M	Cas	GR	No	Val	Cor	Cor	Dup	—	Eat	Eat	Bimel	Gab
Pierce-Ar'w 41-2-3	NE	Wal	**	Her	Cha	Wil	**	NE	VS	VS	Mim	—	Gui	LOF	—	Eat	Eat	Budd	Lov
Plymouth	NE	—	Yes	Sha	AC	Wil	—	—	—	—	Duc	Cor	Cor	—	—	Gen	Gen	‡	Lov
Pontiac	AC	—	AC	BS	AC	DR	—	—	Tern	Tern	Duc	Gui	Gui	—	—	Own	Own	K-H	Lov
Reo Royale 8-35	Ste	Elgin	K-S	DR	Cha	Wil	AC	Yes	Yes	No	†	Gui	Gui	†	No	CG	CG	MotoW	Lov
Reo Royale 8-31	Ste	No	K-S	DR	Cha	Wil	AC	Yes	Yes	No	†	Gui	Gui	—	No	CG	CG	MotoW	Lov
Reo 8-21	Ste	No	K-S	DR	Cha	Wil	K-S	No	No	No	—	*	*	No	No	CG	CG	—	Lov
Reo 6-21	Ste	No	K-S	DR	Cha	Wil	K-S	No	No	No	—	*	*	No	No	CG	CG	—	Lov
Reo Fly'g Cl'd 625	Ste	—	K-S	DR	Cha	Wil	AC	Yes	Yes	No	†	—	Gui	†	No	CG	CG	MotoW	Lov
Studebaker Six	Ste	No	K-S	Yale	Cha	Wil	Ste	—	No	No	*	Ind	Ind	—	No	Ste	Ste	K-H	Lov
Studebak'r Dict. 8	Ste	No	K-S	Yale	Cha	Wil	Ste	No	—	No	*	Ind	Gui	—	No	Ste	Ste	K-H	Lov
Stud. Com. 8-70	Ste	No	K-S	Her	Cha	Wil	Ste	—	—	No	*	Gui	Gui	†	No	Ste	Ste	K-H	Lov
Stud. Pres. 8-80	Ste	NH	K-S	Her	Cha	Wil	Ste	Cas	*	No	*	Gui	Gui	†	No	Ste	Ste	K-H	Hou
Stud. Pres. 8-90	Ste	NH	K-S	Her	Cha	Wil	Ste	Cas	*	No	*	Gui	Gui	†	No	Ste	Ste	K-H	Hou
Stutz LA	Ste	Wal	Mot-M	DR	Cha	Pre	Mot-M	Cas	No	Lin	Val	Ind	—	Dup	—	Buck	Buck	MotoW	Gab
Stutz MA	Ste	Wal	Mot-M	Her	Cha	Pre	Mot-M	Cas	Lin	Lin	Val	Ind	—	Dup	—	Stan	Stan	K-H	Gab
Stutz MB	Ste	Wal	Mot-M	Her	Cha	Pre	Mot-M	Cas	Lin	Lin	Val	Ind	—	Dup	—	Stan	Stan	K-H	Gab
Stutz DV 32	Ste	Wal	Mot-M	Her	Cha	Pre	Mot-M	Cas	Lin	Lin	Val	Ind	Ind	Dup	—	Stan	Stan	K-H	Gab
Willys 97-98 D	NE	No	K-S	Aut-L	Cha	USL	No	No	*	No	*	Yes	Yes	Opt	No	*	*	†	Mon
Willys 8-80 D	NE	No	K-S	Aut-L	Cha	USL	Yes	—	Yes	No	*	Yes	Yes	Opt	No	*	*	†	Mon
Willys-K. 66 D	NE	No	K-S	Aut-L	Cha	USL	Yes	—	Yes	No	*	Yes	Yes	Opt	No	*	*	†	Mon
Willys-K. 95	NE	—	Yes	—	Cha	USL	Yes	—	—	—	Own	Yes	Yes	Opt	—	*	*	Yes	Mon

KEY TO ABBREVIATIONS USED IN THIS TABLE

SPEEDOMETER

AC—AC Spark Plug Co., Flint, Mich.
NE—North East Appliance Corp., Rochester, N. Y.
Ste—Stewart-Warner Speedometer Corp., Chicago.
Var—Various makes.

CLOCK

Borg—The Geo. W. Borg Corporation.
Elgin—Elgin Watch Co.
Jag—Jaeger Watch Co., New York city.
NH—New Haven. See Phi.
Phi—Phinney-Walker Co., New York city.
Ster—Sterling Clock Co., La Salle, Ill.
Thom—Seth Thomas Clock Co.
Wal—Waltham Watch Co., Waltham, Mass.
*Optional.

FUEL GAUGE

AC—AC Spark Plug Co., Flint, Mich.
K-S—King Seeley Corp., Ann Arbor, Mich.
Mot-M—Moto Meter Gauge and Equipment Corp., Long Island City, N. Y., and La Crosse, Wis.
**Pierce-Arrow uses both U. S. and King Seeley.

LOCK

Aut-L—Electric Auto-Lite Co., Toledo.
BS—Briggs-Stratton Co., Milwaukee.
Blos—Blossom, Delco-Remy Corp., Anderson, Ind.
Ele—Mitchell Specialty Co., Holmesburg, Pa.
DR—Delco-Remy Corp., Anderson, Ind.
Her—Hershey Mfg. Co., Chicago.
Sha—Shaler Lock Co., Milwaukee, Wis.
Yale—Yale & Towne Mfg. Co.

SPARK PLUG

AC—AC Spark Plug Co., Flint, Mich.
Cha—Champion Spark Plug Co., Toledo, O.

BATTERY

DR—Delco Remy Corp.
Ex—Electric Storage Battery Co., Philadelphia.
Nat—National Lead Battery Co., St. Paul, Minn.
Pre—Prest-O-Lite Co., Indianapolis, Ind.
USL—USL Battery Corp., Niagara Falls, N. Y.
Wil—Willard Storage Battery Co., Cleveland, O.
*Various makes—Exide, Willard, Delco-Remy and USL.
**Both Exide and Delco-Remy used.

HEAT INDICATOR

AC—AC Spark Plug Co., Flint, Mich.
K-S—King Seeley Corp., Ann Arbor, Mich.
Mot-M—Moto Meter Gauge and Equipment Corp., Long Island City, N. Y., and La Crosse, Wis.
Ste—Stewart-Warner Speedometer Corp.
Ster—Sterling Clock Co., La Salle, Ill.
US—U. S. Gauge Co., New York city.
**Using both U. S. and AC.

CIGAR LIGHTER

*Cigar lighters in many cases are optional equipment, and are not standard on all models; the names of lighters shown indicate the makes supplied to various car makers.
Cas—Casco Products Corp., Bridgeport, Conn.
NE—North East Appliance Corp., Rochester, N. Y.

SMOKING AND VANITY SETS

GR—Grand Rapids Metalcraft Corp., Grand Rapids, Mich.
Lin—Linden.
VS—Van Sicklen Corp., Elgin, Ill.
Tern—Ternstedt Mfg. Co., Detroit, Mich.
Cuno—Cuno Engineering Corp., Meriden, Conn.
*Various makes.

BODY FINISHES

Ditz—Ditzler Color Co., Detroit, Mich.
Duc—E. I. du Pont de Nemours & Co., Philadelphia.
MIM—Pittsburgh Plate Glass Co.
Mur—Murphy Varnish Co., Newark, N. J.
Rin—Rinched Mason Co.
Val—Valentine & Co., New York city.
*Various lacquers used.
†Using both Ditzler and Pratt & Lambert.

STOP AND PARKING LIGHTS

Cor—Corcoran Lamp Co.
Gui—Guide Lamp Corp., Anderson, Ind.
Hal—C. M. Hall Lamp Co., Detroit, Mich.
Ind—Indiana Lamp Corp., Connersville, Ind.
JB—The Jno. W. Brown Lamp Mfg. Co., Columbus, O.
*Using both Hall or Guide.
**Using both Corcoran and Brown.

SAFETY GLASS

Sec—Security, product of General Motors.
Tri—Triplex Safety Glass Co.
LOF—Libbey-Owens-Ford.
Dup—Duplate Corp.
Indestructo—Indestructo Glass Corp.
Opt—Optional.
**Using both LOF and Indestructo.
†Using both LOF and Duplate.

HEATER

Kel—Kelch made by Grand Rapids Metalcraft Corp., Grand Rapids, Mich.
*Optional.
**Not standard equipment on Cadillac V-12.

BUMPERS

ASP—Alloy Steel Products.
Bad—Badger Mfg. Corp., Milwaukee.
Bif—Biflex Corp., Waukegan, Ill.
Buck—See Cen.
CG—C. G. Spring and Bumper Company.
Cen—Central Brass & Fixture Co., Springfield, O. Also makers of Buckeye bumpers.
Eat—Eaton Axle and Spring Co., Cleveland, O.
Gen—General Spring and Bumper, Detroit.
Stan—Standard Steel Spring Corp.
Ste—Stewart-Warner Speedometer Corp.
Wol—Wolverine Bumper & Spec. Co.
†Extra equipment.
*Optional.

WIRE WHEELS

Bimel—Bimel Spoke and Auto Wheel Co., Portland, Ind.
Budd—Budd Wheel Co., Detroit.
MotoW—Motor Wheel Corp., Lansing, Mich.
Day—Dayton Wire Wheel Co., Dayton, O.
K-H—Kelsey-Hayes, Detroit, Mich.
‡Using both Kelsey-Hayes and Motor Wheel Corp.
†Not standard equipment.

SHOCK ABSORBERS

Gab—The Gabriel Company, Cleveland.
Hou—Houde Engineering Corp., Buffalo, N. Y.
Lov—Delco Products Corp., Dayton, O.
Mon—Monroe Auto Equip. Mfg. Co., Monroe, Mich.

Production--Engineering--Factory

Aeronautic Propeller Design

The following, in part, is a paper presented before the twentieth national aeronautic meeting of the Society of Automotive Engineers, at Cleveland, by Frank W. Caldwell, vice president and chief engineer, Hamilton Standard Propeller Corporation, Pittsburgh, Pa.:

For a number of years it has been realized that a serious loss of efficiency occurs when propellers are operated at high peripheral speeds. This loss has been associated with effects present when the speed of sound is reached.

However, whirling tests, run at McCook Field, and later at Wright Field, showed that losses in efficiency began at a much lower speed under conditions of static thrust, the speed at which the losses became apparent ranging from 550 feet per second to 700 feet per second, depending on the design of the propeller and its pitch angles.

A confirmation of this effect was obtained in the tests in the small high-speed wind tunnel, where it was found that the burble of the airfoils occurred at progressively lower angles as the speed was increased. It was also found that the thinner airfoils could be run at higher speed than the thick ones before the flow became inefficient.

The National Advisory Committee for Aeronautics has completed a series of wind tunnel tests on aluminum alloy propellers of moderate camber ratios up to fairly high tip speeds.

These tests indicate that the tip speed losses under the conditions of the tests begin at approximately 950 feet per second and progress at a rate of 10 per cent. loss for each 100 feet per second in excess of this amount.

This perhaps is an illustration of the advantage in propeller design which has been possible with the current type of aluminum alloy propellers as compared to the wooden propellers tested.

It has for a long time been customary to calculate the static stresses in propeller blades and hubs due to the thrust and torque forces and to the centrifugal loads. Comparatively little has been done toward calculating the vibration stresses in a satisfactory manner.

The vibrations resulting in a weaving action of the blades do not seem to be particularly troublesome, as the blades are quite flexible in the direction of the thrust, and there is a very powerful damping action from the centrifugal force.

There is, however, a form of vibration occuring in the plane of torque which may be caused either by natural periods or it may be a forced vibration resulting from the impulses of the engine cylinders. The blades are quite stiff in this direction so that vibrations in this plane may lead to comparatively high stresses before the deflection becomes great enough to permit the dampening action from the centrifugal force. This appears to be the most troublesome form of vibration encountered at the present time. It leads to a tendency toward failures at the point of attachment of the blades to the hubs and failures of the hub parts.

In order to make accelerated tests for this type of failure, we have recently designed a vibrating machine, shown in Fig. 6. The propeller is gripped at the hub and moved laterally back and forth very rapidly, the motion occuring at right angles to the main length of the propeller blades and in a plane corresponding to the plane of torque. This motion can be made very rapid and its amplitude can be governed so that the inertia forces may be made to produce any desired stress. It is now thought that this type of test closely approached the actual conditions of forced vibration present when the propeller is run on the engine.

Safe Life of Propellers

The question of the safe life or maximum length of time which propellers may be run without danger of failure is one which is of great importance at the present time.

Propellers on a number of airlines have been in service for over 2,500 flying hours and defects which can only be discovered after very long period of actual use are being discovered and corrected in so far as possible by improvements in design and materials.

Several propellers have been whirled after 2,500 hours of use without any sign of weakness. On the other hand there have been a number of progressive failures which have not been discovered until after 1,200 to 1,500 hours of service, so that the safe life cannot be stated at the present time.

Some of the New Types of Propellers Now Under Development

Development of the current type of aluminum alloy propellers has been mainly a matter of refinement in design, leading to longer life and increased dependability for this type of propeller. These refinements have been largely a matter of eliminating tendencies toward localization of stress which lead to progressive failures under the influence of vibration.

The metallurgical research is rapidly bringing about a great improvement in the magnesium alloys, and this material appears to have a great deal of promise for many propeller applications.

In addition to the extremely light weight of magnesium alloy, it appears to have a high fatigue strength when properly fabricated. It is particularly promising for use with controllable pitch propellers, since the reduction of blade weight in these designs leads to a reduction in bearing loads, due to centrifugal forces.

Our limited experience with this material, however, indicates that it is even more seriously affected by localization of stress than the aluminus alloys, so that a great deal of refinement of design will be necessary with this material.

Experiments are being carried out at the present time with several methods of manufacturing hollow steel propellers.

This propeller appears to be particularly promising from the weight standpoint when built in the larger sizes, as the hollow construction is almost essential from the standpoint of weight for diameters in excess of 13 feet.

No doubt the development of freight and cargo carrying ships will bring with it a demand for larger diameter-geared propellers, so that this hollow steel development ought to be a very valuable contribution to the cargo carriers.

Controllable Pitch Propellers

A number of types of controllable pitch propellers are under development at the present time in this country and abroad.

At the present time the type being manufactured is being provided with two pitch settings, a low pitch setting for take-off and climb and a high pitch setting for level flight and cruising. The operation of the pitch control is governed by a three-way valve which is turned to one position for low pitch and to the other for high pitch.

The improvement in performance to be obtained from the use of a controllable pitch propeller is of considerable interest to the aircraft designer and operator. Unfortunately, no simple general statement can be made.

For the aircraft designer, experience so far has indicated that the improvement as calculated from performance estimates is substantially realized as long as the tip speeds do not exceed 950 feet per second. For tip speeds in excess of 1,050 feet per second, the gain in engine horsepower obtained from the controllable pitch propeller is largely offset by the increase in tip speed losses.

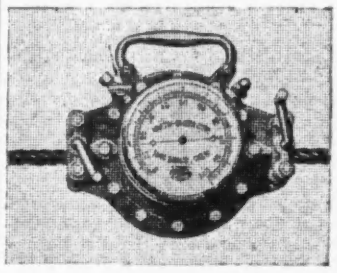
The greatest promise of improvement is in those cases where geared engines are used in planes of very high speed.

For the operator it is a comparatively simple procedure to check the improvement to be obtained from the use of the controllable pitch propeller.

The standard propeller may be set at such an angle as to permit the engine to turn at its maximum rated speed during the climb, and a climbing test made under these conditions.

The propeller may then be set at the pitch giving best cruising efficiency and cruising tests may be run. The combination of these two tests will give the best prediction of the improvement to be expected with the controllable pitch propeller.

TENSION INDICATOR MEASURES LINE LOADS



MARTIN-DECKER tension indicator

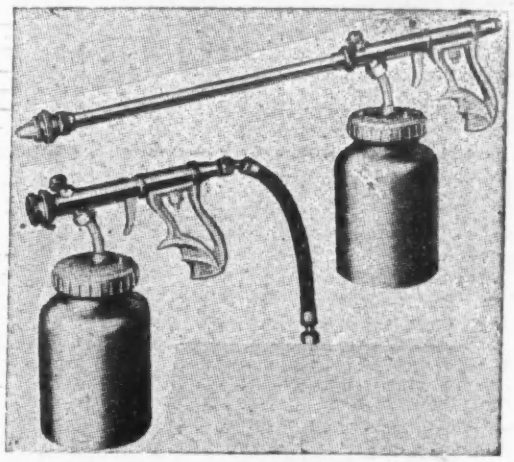
An instrument which is described as simple and light weight for obtaining the line loads on elevator cables, cranes, hoists, etc., has been introduced by Martin-Decker Corporation, Long Beach, Cal. It can be applied to the wire or cable, the load read and the instrument removed in less than a minute, it is claimed. Provision is made for temperature adjustments when close accuracy is desired.

In operation the tension indicator is clamped directly to the cable span, measuring the load by the deflection principle without deadending or taking up slack. A definite offset is made in the line between two fixed points and the force required to make or maintain this offset is shown on the gauge, a direct indication of the line load. It may be applied to the cable while under load, prior to the application of the stress, or during changes of the load. Using a calibrated line, any pulling load may be measured.

In construction the tension indicator comprises two adjustable clamps, one at each end, which bring the line to a fixed stop. Between these clamps a pressure plate is fitted with a projection which attains the line offset. This pressure plate bears against a flexible, canvas reinforced rubber diaphragm backed up by a body of fluid. The fluid pressure generated is a positive measure of the force required to maintain the offset in the line, and is indicated on the gauge. It can be directly transposed into actual pounds tension on the cable.

Two sizes of the instrument are available.

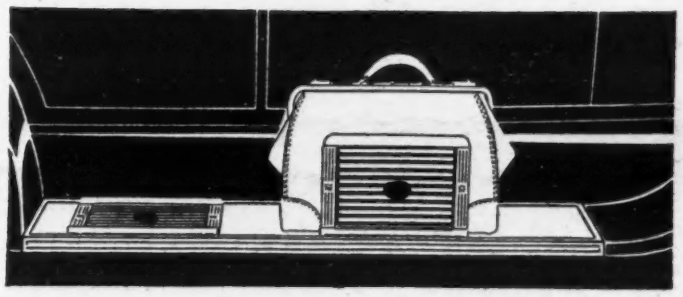
Four New Paasche Air Spray Units



ABOVE, GBRL2 oiling and cleaning gun with one-quart screw-cover spion cup. Left, GBF air brush with cup

Four newly developed air-spray units have been introduced by Paasche Airbrush Company, Chicago, Ill. They include the GB siphon air brush; a complete air finishing unit, including air brush, nickel plated air conditioning unit with water and oil separator; gauge, hose, etc., and the type XO and XBO oiling guns with 45 deg. swivel nozzle.

'Lugmat' Combination Carrier and Step Plate



LUGMAT IN PLACE on running board as a conventional step plate and raised for holding luggage

The Lugmat, a combination step plate and luggage carrier, has been introduced by the Burrows Metal Manufacturing Company, New York city. When used to hold luggage in place on the running board, it is raised, hinging along one of the long edges. It is lined on the inside (or underside when used as a step plate) with cushion rubber vulcanized in place. This lining, together with the spring in the hinge, clasps the luggage firmly.

When not used as a luggage carrier the device folds down on the running board to which it is fastened and becomes a conventional step plate. Price $7.50 per pair.

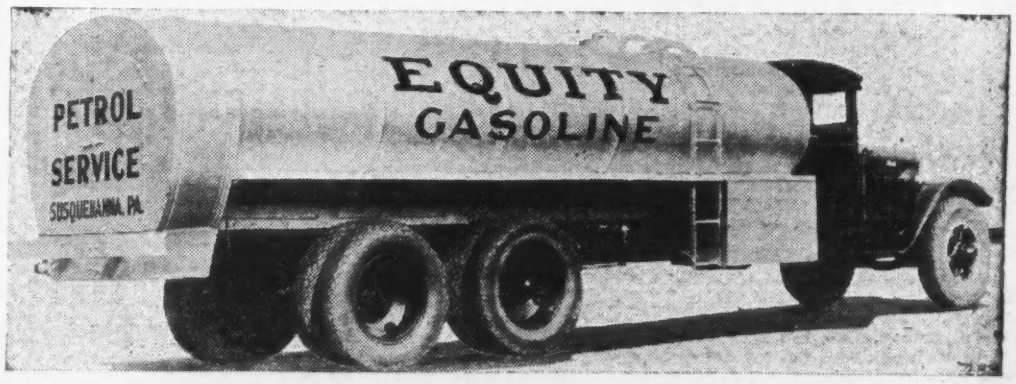
STEEL FOUNDERS TO MEET IN CHICAGO SEPT. 16, 17

The Steel Founders' Society of America will meet at the Hotel Sherman, Chicago, Ill., Wednesday and Thursday, September 16 and 17, it is announced.

The program arranged for the first day includes committee meetings, a joint dinner meeting and a meeting of the board of directors. Committee reports, members' individual reports and a report of the managing director, Granville P. Rogers, will be presented the forenoon of the second day.

At the Thursday luncheon to members and guests, at which W. H. Worrilow will preside, Homer J. Buckley, president Buckley-Dement & Co., Chicago, will be luncheon speakers on the subject, "Straight Line Methods to Sell Steel Castings."

Columbian 4,000 Gal. Aluminum Tank



4,000-GALLON ALUMINUM TRUCK TANK, manufactured by Columbian Steel Tank Company, Kansas City, which is thought by the manufacturer to be the largest liquid hauling tank with the traction wheels under it. The tank weighed 3,840 pounds, or .96 per gallon capacity, with tandem dual wheels